

REMARKS

Claims 1-8 and 11-30 were pending in the application. New claims 31-34 have been added. New claims 31-34 are supported in the specification; for example, on page 14, lines 4-12; therefore, no new matter is added.

In view of the amendments and following remarks, Applicant respectfully traverses the rejections.

I. Objections to the specification

The specification stands objected to as allegedly failing to provide proper antecedent basis for the claimed subject matter. This contention is respectfully traversed.

Antecedent basis for a light reflecting film with concavities and convexities is provided in the specification, for example, in the passage beginning on page 16, line 23 of the current specification, which states that "And, the concavities and convexities in the surface of the light reflecting film 16 are so designed that, for example, the light having entered from a direction inclined by an angle of 30° with respect to the direction orthogonal to the light reflecting film 16 may be strongly reflected in this direction orthogonal thereto."

Further, figures 1-3 clearly illustrate that the surface has an uneven surface with convexities and concavities. The

uneven surfaces shown in Figures 1-3 illustrate an implementation where the upper surface of a layer such as interlayer insulating film 136' of Figure 2 is made irregular using a known technique in order to improve reflection (see, e.g., page 20, lines 16-18 of the specification). In such implementations, layers formed conformally thereon (which may include electrode layers and reflecting layers) would also be irregular, as shown in Figures 1-3.

The porous nature of the surface of a light reflecting film such as light reflecting film 16 of Figure 1, anodic oxide film 152 of Figure 2, and first, second, and third anodic oxide films 152, 153, and 154 of Figure 3 is clearly described throughout the specification. For example, the passages on page 14, line 21 to page 15, line 15 of the specification clearly describe both the porous nature of a particular example of a light reflecting film and an example of a method of forming the light reflecting film. Applicant has amended the specification to clarify that the porous layer discussed in these passages is the light reflecting film 16. Further, Figures 2 and 3 were amended in a previous action to illustrate the porous nature of a surface of the light reflecting film.

For at least these reasons, a person skilled in the art would understand that Applicant had possession of the invention

with regard to a light reflecting film having both a porous surface and having convexities and concavities, at the time the application was filed.

Applicant would like to point out that the Federal Circuit has made clear that the specification need not include verbatim support for claim terms. See, e.g. Purdue Pharma v. Faulding Corporation, 230 F.3d 1320, 1324 (Fed. Cir. 2000). Rather, all that is needed to satisfy the written description requirement of 35 USC 112, first paragraph, is disclosure in the application that reasonably conveys to an artisan that the inventor had possession at the time of filing of the claimed subject matter. See, e.g., In re Kaslow, 217 USPQ 1089 (Fed. Cir. 1983). Additionally, the supporting disclosure need not be express but rather can be inherent. See, e.g., Atmel v. Information Storage Devices, 198 F.3d 1375, 1380 (Fed. Cir. 1999).

Since the specification clearly describes and illustrates implementations of a light reflecting layer including a surface which is both porous and includes concavities and convexities, at least inherently, the specification provides proper antecedent basis for the claims. Note that the cited passages and figures of the current specification are illustrative rather than limiting.

II. The rejections under 35 U.S.C. 103(a)

Claims 1-8, 12-17, and 19-26 stand rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 5,805,252 to Shimada et al. ("Shimada") in view of U.S. Patent No. 5,550,658 to Yoshihiro ("Yoshihiro").

Claim 1

Claim 1 is patentable over Shimada and Yoshihiro because neither reference teaches or suggests "a light reflective film containing at least two layers on each of said pixel electrodes, each layers having concavities and convexities" and "wherein one of said two layers has a first porous surface and the other one of said two layers has a second porous surface," as recited in claim 1.

The office action states that the term 'the porous surface of the light reflective film' is not clearly defined in the specification as well as in the new submitted drawing, so that the broadest reasonable interpretation of the term 'the porous surface' is an unevenly surface which can include a plurality of convexities and concavities. (See page 3 of the office action). This rejection is both incorrect and improper.

The first and second porous surfaces of claim 1 are clearly supported in the specification. For example, first anodic oxide

film 152 and second anodic oxide film 153, shown in Figure 3, include such porous surfaces (see, e.g., page 21, lines 10-22 of the specification; note that this is an example only and does not limit the scope of claim 1). Although these passages do not explicitly refer to convexities and concavities, the convexities and concavities are clearly shown in Figure 3.

Second, the term "porous" is used according to its plain meaning throughout the specification. Appendix A is a printout from Merriam-Webster's online Collegiate dictionary, which defines "porous" as "possessing or full of pores." Appendix B is a printout from the same source, which defines a "pore" as "a minute opening especially in an animal or plant." Since the specification and claims use the term "porous" in accordance with these definitions, the term "porous" is clearly definite.

Third, it is respectfully suggested that it is improper for the office action to define a claim term in a way that is not in accord with its plain meaning when the specification does not clearly so define that term. According to MPEP 2111.01, "the words of a claim must be given their 'plain meaning' unless they are defined in the specification." Although "applicant may be his or her own lexicographer, as long as the meaning assigned to the term is not repugnant to the term's well known usage," (see MPEP 2111.02), Applicant uses the word "porous" in the way it is

usually understood in the context of materials science.

Therefore, the office action's interpretation of the word "porous" to mean "unevenly", rather than giving the term its plain meaning, is improper.

As stated above, claim 1 is patentable over the references because neither reference teaches or suggests a light reflection film as recited in claim 1. In Shimada, "a reflection electrode 38 made of aluminum is formed on the organic insulating film 42 to overlap an opposite end of the drain electrode 37 against the end on which the semiconductor layer 35 is overlapped." (See column 9, lines 51-54 of Shimada.) "The organic insulating film 42 has convex portions (bumps) 42a in regions on which reflection electrodes 38 are to be formed." (See column 9, lines 44-46 of Shimada). As shown in Figure 14 of Shimada, reflecting electrode 38 is formed with bumps rather than pores. Shimada does not teach or suggest that reflecting electrode 38 have a porous surface.

A reflecting layer with a porous surface has a number of advantages over a reflecting electrode with bumps as described in Shimada. As the specification suggests, "by changing the diameter and depth of the pores of the porous layer formed as the light reflecting film, the scattering of light can be made large in amount and the incident light can be reflected in a

desired direction." (See page 10, lines 1-5 of the specification). The specification further explains that "in the light reflecting film consisting of the porous layer, the dependency of the reflected light upon the incident angle becomes small as in the case of a mirror reflection and therefore an image plane easy to view and high in luminance can be obtained." (See page 15, line 21 to page 16, line 1 of the specification).

An additional advantage is obtained by providing a multi-layered light reflecting film: "the angle at which light is scattered uniformly can be changed." (See page 11, lines 1 and 2 of the specification). Thus, multi-layered light reflecting films may be used in a television to provide a display that may be viewed from any direction. (See, e.g., page 24, lines 9-11 of the specification).

Yoshihiro fails to remedy the deficiencies of Shimada. Yoshihiro teaches a reflector for a liquid crystal display including a first metal layer containing a non-precious metal and a second metal layer formed on the first metal layer and containing a precious metal. (See the Abstract of Yoshihiro). Yoshihiro does not teach or suggest that either the first or second metal layer includes a porous surface.

At least because neither reference teaches or suggests these features of claim 1, claim 1 is patentable over Shimada and Yoshihiro, alone or in combination.

Claims 2-7

Claims 2-7 depend from claim 1 and are therefore patentable for at least the same reasons as stated above with respect to claim 1.

Claim 8

Claim 8 is patentable over the references at least because neither Shimada nor Yoshihiro teaches or suggests "a light reflective film containing at least two layers on said pixel electrode, each layers having concavities and convexities, wherein one of said at least two layers has a porous surface," as recited in claim 8. As stated above with respect to claim 1, neither Shimada nor Yoshihiro teaches or suggests a light reflective film with a porous surface.

Claims 11-13

Claims 11-13 depend from claim 8 and are therefore patentable for at least the same reasons as stated above with respect to claim 8.

Claim 14

Claim 14 is patentable over the references at least because neither Shimada nor Yoshihiro teaches or suggests "a light

reflective film containing at least two layers on said pixel electrode, each layers having concavities and convexities, wherein one or said at least two layers has a first porous surface and the other one of said at least two layers has a second porous surface," as recited in claim 14. As stated above with respect to claim 1, neither Shimada nor Yoshihiro teaches or suggests a light reflective film with a porous surface.

Claims 15-18

Claims 15-18 depend from claim 14 and are therefore patentable for at least the same reasons as stated above with respect to claim 14.

Claim 19

Claim 19 is patentable over the references at least because neither Shimada nor Yoshihiro teaches or suggests "a light reflective film formed on said pixel electrode, wherein said light reflective film has a porous surface, and has concavities and convexities" as recited in claim 19. As stated above with respect to claim 1, neither Shimada nor Yoshihiro teaches or suggests a light reflective film with a porous surface.

Claims 20-22

Claims 20-22 depend from claim 19 and are therefore patentable for at least the same reasons as stated above with respect to claim 21.

Claim 23

Claim 23 is patentable over the references at least because neither Shimada nor Yoshihiro teaches or suggests "a light reflective film formed on said pixel electrode, wherein said light reflective film has a porous surface, and has concavities and convexities," as recited in claim 23. As stated above with respect to claim 1, neither Shimada nor Yoshihiro teaches or suggests a light reflective film with a porous surface.

Claims 24-26

Claims 24-26 depend from claim 23 and are therefore patentable for at least the same reasons as stated above with respect to claim 23.

Claim 27

Claim 27 is patentable over the references at least because neither Shimada nor Yoshihiro teaches or suggests "a light reflective film formed on said pixel electrode, wherein said light reflective film has a porous surface, and has concavities and convexities," as recited in claim 27. As stated above with respect to claim 1, neither Shimada nor Yoshihiro teaches or suggests a light reflective film with a porous surface.

Claims 28-30

Claims 28-30 depend from claim 27 and are therefore patentable for at least the same reasons as stated above with respect to claim 27.

III. New claims 31-34

As stated above, new claims 31-34 are supported in the specification; for example, on page 14, lines 4-12; therefore, no new matter is added.

Further, new claim 31 is patentable over the cited references at least because neither Shimada nor Yoshihiro teaches or suggests "a light reflective film formed on said pixel electrode, wherein said light reflective film has a porous surface, and has concavities and convexities," as recited in claim 31. As stated above with respect to claim 1, neither Shimada nor Yoshihiro teaches or suggests a light reflective film with a porous surface. New claims 32-34 depend from claim 31 and are therefore patentable for at least the same reasons as stated above with respect to claim 31.

Attached is a marked-up version of the changes being made by the current amendment.

CONCLUSION

In view of the amendments and foregoing remarks, Applicant believes that claims 1-8 and 11-34 are in condition for allowance, and requests a notice of allowance. The Examiner is invited to call the undersigned at (858) 678-5070 if the Examiner has any questions regarding this response.

Enclosed is a \$156 check for excess claim fees. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: 9/18/02



LINDA GUNDERSON
REG NO 46,341

Scott C. Harris
Reg. No. 32,030

Fish & Richardson P.C.
4350 La Jolla Village Drive, Suite 500
San Diego, California 92122
Telephone: (858) 678-5070
Facsimile: (858) 678-5099

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Version with markings to show changes made

In the specification:

Paragraph beginning at page 14, line 21 has been amended as follows:

Regarding the anodic oxidation, when electrolysis is made in a solution, on the anode side electrons move from the solution side to within the electrode and so oxidizable material in the solution is oxidized. For example, electrolysis is made with an aluminum electrode being placed in a 3% aqueous solution of oxalic acid. An anodic oxide film, light reflecting film 16, consisting of a porous layer is formed on the surface of the aluminum electrode.

Paragraph beginning at page 15, line 4 has been amended as follows:

When expressed in the form of a typical view, the porous layer produced on the surface of the aluminum electrode, light reflecting film 16, is arranged such that fine holes, oxide cells each surrounding this fine hole and barrier layers each constituting the bottom portion of the fine hole are successively formed in large number. Accordingly, the configuration of the porous layer can be changed by varying the conditions of the anodization treatment.



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porous
diffuse-porous
ring-porous

Main Entry: **po·rous**

Pronunciation: 'pOr-&s, 'por-

Function: *adjective*

Date: 14th century

1 **a** : possessing or full of pores **b** : containing vessels <hardwood is *porous*>

2 **a** : permeable to fluids **b** : permeable to outside influences

3 : capable of being penetrated <*porous* national boundaries>

- **po·rous·ly** *adverb*

- **po·rous·ness** *noun*

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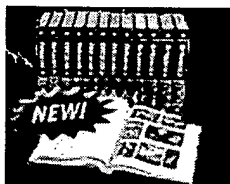
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\ch\ as **ch** in chin

\g\ as **g** in go
\i\ as **i** in hit
\I\ as **i** in ice
\j\ as **j** in job
\[ng]\ as **ng** in sing
\O\ as **o** in go

\th\ as **th** in thin
\[th]\ as **th** in the
\ü\ as **oo** in loot
\u\ as **oo** in foot
\y\ as **y** in yet
\zh\ as **si** in vision

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Main Entry: ²pore

Function: *noun*

Etymology: Middle English, from Middle French, from Latin
porus, from Greek *poros* passage, pore -- more at [FARE](#)

Date: 14th century

- 1 : a minute opening especially in an animal or plant; *especially* :
one by which matter passes through a membrane
2 : a small interstice (as in soil) admitting absorption or passage of
liquid

- **pored** /'p0rd, 'pord/ *adjective*

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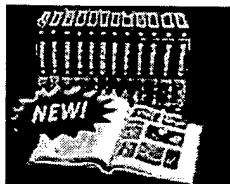
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\e\ as e in bet
\E\ as ea in easy

\o\ as aw in law
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\i\ as i in hit
\I\ as i in ice
\j\ as j in job
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